

Author Index of Volume 87

Adrover, A. 275
Aguilar, R. 351
Aguilera, M.E. 31

Bernard-Michel, B. 135
Bhatia, S. 49
Björk, H. 381

Cao, G. 239
Cerro, R.L. 31
Chang, S. 121
Chianese, A. 187
Cipriani, P. 187
Cox, H.H.J. 101

Dehkordi, A.M. 227
Delgado, J.A. 111
Deshusses, M.A. 101
Dewsbury, K.H. 129
Ding, F. 181
Duan, Z. 149

Fane, A.G. 121
Fang, M. 395
Fernández, A. 251
Ferschneider, G. 41
Fletcher, D.F. 301
Foscolo, P.U. 61

Gallucci, K. 61
García, J. 157
Gilarranz, M.A. 157
Giona, M. 275
Golonka, K. 329

Gourdon, C. 11
Houi, D. 251
Ingemar Odenbrand, C.U. 207
Iou, Q.-L. 197

Jand, N. 61
Jiraratananon, R. 321
Karamanov, D.G. 129
Koh, J.-H. 367
Krishna, R. 1
Kunkel, C. 207
Kunzru, D. 219

Langrish, T.A.G. 301
Lau, N.T. 395
Lei, Z. 149
Leu, H.G. 163
Lim, H.C. 367
Lin, S.H. 163
Liu, Z. 181
Looi, A.Y. 329
López de Ramos, A.L. 31
Lyddiatt, A. 313

Ma, J. 395
Macêdo, E.N. 339
Magno, R.N.O. 339
Mahajani, V.V. 403
Makarytchev, S.V. 301
Mann, R. 21
Margaritis, A. 129
Martin, C. 89

Martínez, I. 111
Martínez-Guerra, R. 351
Matros, Yu.Sh. 73
McKenna, T.F. 89
Mège, P. 41
Mohamed, A.R. 49

Nakano, K. 261
Oliet, M. 157
Orrù, R. 239
Ovejero, G. 111

Pagnanelli, F. 275
Pan, C.L. 163
Pant, K.K. 219
Parisi, M. 187
Paschek, D. 1
Patnaik, P.R. 357
Perić, J. 171
Pimbert, A. 321
Pomès, V. 251
Pons, M.N. 135, 171
Poznyak, A. 351

Qian, S. 395
Quaresma, J.N.N. 339

Rangaiah, G.P. 285
Rasmuson, A. 381
Rhodes, M. 329
Rito-Palomares, M. 313
Rodríguez, F. 157
Romdhane, M. 11

Saha, P. 285
Santini, M. 61
Seo, H.-K. 367
Shiraishi, F. 261
Sotelo, J.L. 111
Sungpet, A. 321

Tadé, M.O. 285
To, K.L. 395
Toro, L. 275
Tye, C.T. 49

Vaidya, P.D. 403
Valeva, M.D. 21
Vigneswaran, S. 121
Vivier, H. 135
Vlaev, S.D. 21
Vučak, M. 171

Wang, H. 149
Wang, L. 395
Wang, S. 261
Wang, T.-T. 197
Way, J.D. 321
Westerberg, B. 207

Yin, G. 181
Yoo, Y.-S. 367
Yuan, N. 181

Zagoruiko, A.N. 73
Zhan, J. 181
Zhou, R. 149
Žmikić, A. 171



Subject Index of Volume 87

Acetic acid

Insight into heterogeneous catalytic wet oxidation of phenol over a Ru/TiO₂ catalyst, 403

Activated carbon

Adsorption of lindane from water onto GAC: effect of carbon loading on kinetic behavior, 111

Adsorption

Impacts of the surface charge property on protein adsorption on hydroxyapatite, 181

Adsorption kinetics

Adsorption of lindane from water onto GAC: effect of carbon loading on kinetic behavior, 111

After-treatment system

Optimisation of a dosing strategy for an HC-SCR diesel exhaust after-treatment system, 207

Aqueous two-phase

Process integration using aqueous two-phase partition for the recovery of intracellular proteins, 313

Barium sulphate

Quantification, by image analysis, of effect of operational conditions on size and shape of precipitated barium sulphate, 135

Batch versus fed-batch fermentation

Comparative evaluation of batch and fed-batch bioreactors for GAPDH production by recombinant *Escherichia coli* with distributed plasmid copy number, 357

Bead mill

Process integration using aqueous two-phase partition for the recovery of intracellular proteins, 313

Biofilter

Co-treatment of H₂S and toluene in a biotrickling filter, 101

Biotrickling filter

Co-treatment of H₂S and toluene in a biotrickling filter, 101

Bovine serum albumin

Impacts of the surface charge property on protein adsorption on hydroxyapatite, 181

Bubbling

Experimental assessment of filtration of biomass with transverse and axial fibres, 121

t-Butanol

Insight into heterogeneous catalytic wet oxidation of phenol over a Ru/TiO₂ catalyst, 403

C4

Influence of salt added to solvent on extractive distillation, 149

CaCO₃

A study of carbon dioxide absorption into aqueous monoethanolamine solution containing calcium nitrate in the gas-liquid reactive precipitation of calcium carbonate, 171

Calcium aluminate

Catalytic pyrolysis of n-heptane on unpromoted and potassium promoted calcium aluminates, 219

ε-Caprolactam

Purification of ε-caprolactam by means of a new dry-sweating technique, 187

Carbon dioxide

A study of carbon dioxide absorption into aqueous monoethanolamine solution containing calcium nitrate in the gas-liquid reactive precipitation of calcium carbonate, 171

Carbonation

A study of carbon dioxide absorption into aqueous monoethanolamine solution containing calcium nitrate in the gas-liquid reactive precipitation of calcium carbonate, 171

Catalysts

Catalytic pyrolysis of n-heptane on unpromoted and potassium promoted calcium aluminates, 219

Cell disruption

Process integration using aqueous two-phase partition for the recovery of intracellular proteins, 313

Centrifuge

Purification of ε-caprolactam by means of a new dry-sweating technique, 187

Characteristic time

Characteristic time determination for transport phenomena during the electrokinetic treatment of a porous medium, 251

Chlorinated aromatics

Self-propagating reactions for environmental protection: state of the art and future directions, 239

2-Chlorophenol

Equilibrium and mass transfer characteristics of 2-chlorophenol removal from aqueous solution by liquid membrane, 163

Claus process

Mathematical modelling of Claus reactors undergoing sulfur condensation and evaporation, 73

Closed-form solution

A closed-form solution of population-balance models for the dissolution of polydisperse mixtures, 275

CO₂ diffusion

Enhanced CO₂ diffusion in wedges, 31

Coal gasification

Application of coal gasification technology as a flue gas pre-conditioning step for the catalytic reduction of acid gases, 395

Competitive transport

Facilitated transport of unsaturated hydrocarbons through crosslinked-poly(sulfonated styrene), 321

Computational fluid dynamics

CFD analysis of spinning cone columns: prediction of unsteady gas flow and pressure drop in a dry column, 301

Copper

A novel two-impinging-jets reactor for copper extraction and stripping processes, 227

Copper/LIX system

A novel two-impinging-jets reactor for copper extraction and stripping processes, 227

Copy number variance

Comparative evaluation of batch and fed-batch bioreactors for GAPDH production by recombinant *Escherichia coli* with distributed plasmid copy number, 357

Core-annulus structure
Dilute gas–solid flow in a riser, 41

Correlation effects
Verification of the Maxwell–Stefan theory for diffusion of three-component mixtures in zeolites, 1

Crosslinked-poly(sulfonated styrene)
Facilitated transport of unsaturated hydrocarbons through crosslinked-poly(sulfonated styrene), 321

Delignification
Solvent effects in autocatalyzed alcohol–water pulping. Comparative study between ethanol and methanol as delignifying agents, 157

Design
Experimental assessment of filtration of biomass with transverse and axial fibres, 121

Diffusion in wedge
Enhanced CO₂ diffusion in wedges, 31

Dimensional analysis
Characteristic time determination for transport phenomena during the electrokinetic treatment of a porous medium, 251

Dissolution
A closed-form solution of population-balance models for the dissolution of polydisperse mixtures, 275

Drag coefficient
Rising solid sphere hydrodynamics at high Reynolds numbers in non-Newtonian fluids, 129

Dry-sweating technique
Purification of ϵ -caprolactam by means of a new dry-sweating technique, 187

Dynamics
A method for life cycle assessment environmental optimisation of a dynamic process exemplified by an analysis of an energy system with a superheated steam dryer integrated in a local district heat and power plant, 381

Electrochemistry
Consideration of numerical simulation parameters and heat transfer models for a molten carbonate fuel cell stack, 367

Electrokinetic
Characteristic time determination for transport phenomena during the electrokinetic treatment of a porous medium, 251

Electroremediation
Characteristic time determination for transport phenomena during the electrokinetic treatment of a porous medium, 251

Energy
Consideration of numerical simulation parameters and heat transfer models for a molten carbonate fuel cell stack, 367

Energy system
A method for life cycle assessment environmental optimisation of a dynamic process exemplified by an analysis of an energy system with a superheated steam dryer integrated in a local district heat and power plant, 381

Environmental design
A method for life cycle assessment environmental optimisation of a dynamic process exemplified by an analysis of an energy system with a superheated steam dryer integrated in a local district heat and power plant, 381

Equilibrium relation
Equilibrium and mass transfer characteristics of 2-chlorophenol removal from aqueous solution by liquid membrane, 163

Ethanol
Solvent effects in autocatalyzed alcohol–water pulping. Comparative study between ethanol and methanol as delignifying agents, 157

Ethanol–water
Influence of salt added to solvent on extractive distillation, 149

Ethylene
Modeling of catalytic reactor for oxidative coupling of methane using La₂O₃/CaO catalyst, 49

Eucalyptus globulus
Solvent effects in autocatalyzed alcohol–water pulping. Comparative study between ethanol and methanol as delignifying agents, 157

European transient cycle
Optimisation of a dosing strategy for an HC-SCR diesel exhaust after-treatment system, 207

Extractive distillation
Influence of salt added to solvent on extractive distillation, 149

Extractor
Investigation in solid–liquid extraction: influence of ultrasound, 11

Facilitated transport membranes
Facilitated transport of unsaturated hydrocarbons through crosslinked-poly(sulfonated styrene), 321

Fibre membrane
Experimental assessment of filtration of biomass with transverse and axial fibres, 121

Fibre orientation
Experimental assessment of filtration of biomass with transverse and axial fibres, 121

Filament rise
Enhanced CO₂ diffusion in wedges, 31

Fixed bed catalytic reactor
Modeling of catalytic reactor for oxidative coupling of methane using La₂O₃/CaO catalyst, 49

Flue gas
Application of coal gasification technology as a flue gas pre-conditioning step for the catalytic reduction of acid gases, 395

Fluidised bed reactors
Cold model characterisation of a fluidised bed catalytic reactor by means of instantaneous pressure measurements, 61

Formic acid
A synergistic effect of photocatalysis and ozonation on decomposition of formic acid in an aqueous solution, 261

Four-stage evaporator system
Nonlinear model predictive control of an industrial four-stage evaporator system via simulation, 285

Free rise
Rising solid sphere hydrodynamics at high Reynolds numbers in non-Newtonian fluids, 129

Fuel cell
Consideration of numerical simulation parameters and heat transfer models for a molten carbonate fuel cell stack, 367

GAPDH
Comparative evaluation of batch and fed-batch bioreactors for GAPDH production by recombinant *Escherichia coli* with distributed plasmid copy number, 357

Gas hold-up
Some effects of rheology on the spatial distribution of gas hold-up in a mechanically agitated vessel, 21

Gas–liquid–solid (precipitation, crystallization)
A study of carbon dioxide absorption into aqueous monoethanolamine solution containing calcium nitrate in the gas–liquid reactive precipitation of calcium carbonate, 171

Gas–solid flow
Dilute gas–solid flow in a riser, 41

Glyceraldehyde 3-phosphate dehydrogenase
Process integration using aqueous two-phase partition for the recovery of intracellular proteins, 313

Halides
The solvent effect and the structural effect of halides on the quaternization Et₃N + RX → Et₃RNX, 197

Heat transfer
 Particle morphology and transport phenomena in olefin polymerisation, 89
 Consideration of numerical simulation parameters and heat transfer models for a molten carbonate fuel cell stack, 367

***n*-Heptane**
 Catalytic pyrolysis of *n*-heptane on unpromoted and potassium promoted calcium aluminates, 219

H₂S
 Co-treatment of H₂S and toluene in a biotrickling filter, 101

Hydrodynamics
 Rising solid sphere hydrodynamics at high Reynolds numbers in non-Newtonian fluids, 129

Hydrogen sulphide
 Mathematical modelling of Claus reactors undergoing sulfur condensation and evaporation, 73

Hydrometallurgical wastes
 Self-propagating reactions for environmental protection: state of the art and future directions, 239

Hydroquinone
 Insight into heterogeneous catalytic wet oxidation of phenol over a Ru/TiO₂ catalyst, 403

Hydroxyapatite
 Impacts of the surface charge property on protein adsorption on hydroxyapatite, 181

Image analysis
 Quantification, by image analysis, of effect of operational conditions on size and shape of precipitated barium sulphate, 135

Impingement zone
 A novel two-impinging-jets reactor for copper extraction and stripping processes, 227

Impinging jets
 A novel two-impinging-jets reactor for copper extraction and stripping processes, 227

Impinging streams
 A novel two-impinging-jets reactor for copper extraction and stripping processes, 227

Integral transform
 Solutions for the internal boundary layer equations in simultaneously developing flow of power-law fluids within parallel plates channels, 339

Intracellular proteins
 Process integration using aqueous two-phase partition for the recovery of intracellular proteins, 313

Kinetic Monte Carlo simulations
 Verification of the Maxwell–Stefan theory for diffusion of three-component mixtures in zeolites, 1

Kinetics
 Impacts of the surface charge property on protein adsorption on hydroxyapatite, 181

Langmuir–Hinshelwood type
 A synergistic effect of photocatalysis and ozonation on decomposition of formic acid in an aqueous solution, 261

Lanthanum oxysulfide
 Application of coal gasification technology as a flue gas pre-conditioning step for the catalytic reduction of acid gases, 395

Life cycle assessment
 A method for life cycle assessment environmental optimisation of a dynamic process exemplified by an analysis of an energy system with a superheated steam dryer integrated in a local district heat and power plant, 381

Lignite
 Drying kinetics of single porous particles in superheated steam under pressure, 329

Lindane
 Adsorption of lindane from water onto GAC: effect of carbon loading on kinetic behavior, 111

Liquid membrane
 Equilibrium and mass transfer characteristics of 2-chlorophenol removal from aqueous solution by liquid membrane, 163

Liquid–liquid extraction
 A novel two-impinging-jets reactor for copper extraction and stripping processes, 227

Mass transfer
 Particle morphology and transport phenomena in olefin polymerisation, 89

Mass transfer model
 Equilibrium and mass transfer characteristics of 2-chlorophenol removal from aqueous solution by liquid membrane, 163

Mathematical modelling
 Mathematical modelling of Claus reactors undergoing sulfur condensation and evaporation, 73

Maxwell–Stefan theory
 Verification of the Maxwell–Stefan theory for diffusion of three-component mixtures in zeolites, 1

MCFC
 Consideration of numerical simulation parameters and heat transfer models for a molten carbonate fuel cell stack, 367

MEA
 A study of carbon dioxide absorption into aqueous monoethanolamine solution containing calcium nitrate in the gas–liquid reactive precipitation of calcium carbonate, 171

Melt down
 Particle morphology and transport phenomena in olefin polymerisation, 89

Methanol
 Solvent effects in autocatalyzed alcohol–water pulping. Comparative study between ethanol and methanol as delignifying agents, 157

Microfiltration
 Experimental assessment of filtration of biomass with transverse and axial fibres, 121

Mixing
 Some effects of rheology on the spatial distribution of gas hold-up in a mechanically agitated vessel, 21

Mixture diffusion
 Verification of the Maxwell–Stefan theory for diffusion of three-component mixtures in zeolites, 1

Model predictive control
 Nonlinear model predictive control of an industrial four-stage evaporator system via simulation, 285

Modeling
 Modeling of catalytic reactor for oxidative coupling of methane using La₂O₃/CaO catalyst, 49
 Cold model characterisation of a fluidised bed catalytic reactor by means of instantaneous pressure measurements, 61

Morphology
 Particle morphology and transport phenomena in olefin polymerisation, 89
 Quantification, by image analysis, of effect of operational conditions on size and shape of precipitated barium sulphate, 135

Nitric oxide
 Application of coal gasification technology as a flue gas pre-conditioning step for the catalytic reduction of acid gases, 395

NO_x reduction
 Optimisation of a dosing strategy for an HC-SCR diesel exhaust after-treatment system, 207

Noisy measurements
 Reaction heat estimation in continuous chemical reactors using high gain observers, 351

Nonlinear control
 Nonlinear model predictive control of an industrial four-stage evaporator system via simulation, 285

Non-Newtonian flow
 Some effects of rheology on the spatial distribution of gas hold-up in a mechanically agitated vessel, 21

Non-Newtonian liquids
 Rising solid sphere hydrodynamics at high Reynolds numbers in non-Newtonian fluids, 129

Numerical analysis
 Consideration of numerical simulation parameters and heat transfer models for a molten carbonate fuel cell stack, 367

Odor
 Co-treatment of H_2S and toluene in a biotrickling filter, 101

Olefin polymerisation
 Particle morphology and transport phenomena in olefin polymerisation, 89

Open-loop unstable process
 Nonlinear model predictive control of an industrial four-stage evaporator system via simulation, 285

Operational conditions
 Quantification, by image analysis, of effect of operational conditions on size and shape of precipitated barium sulphate, 135

Opposed jets
 A novel two-impinging-jets reactor for copper extraction and stripping processes, 227

Organosolv pulping
 Solvent effects in autocatalyzed alcohol-water pulping. Comparative study between ethanol and methanol as delignifying agents, 157

Oxidative coupling of methane
 Modeling of catalytic reactor for oxidative coupling of methane using La_2O_3/CaO catalyst, 49

Ozonation
 A synergistic effect of photocatalysis and ozonation on decomposition of formic acid in an aqueous solution, 261

Phenol
 Insight into heterogeneous catalytic wet oxidation of phenol over a Ru/TiO_2 catalyst, 403

Photocatalysis
 A synergistic effect of photocatalysis and ozonation on decomposition of formic acid in an aqueous solution, 261

Poly(pyrrole)
 Facilitated transport of unsaturated hydrocarbons through crosslinked poly(sulfonated styrene), 321

Population-balance equations
 A closed-form solution of population-balance models for the dissolution of polydisperse mixtures, 275

Potassium carbonate
 Catalytic pyrolysis of *n*-heptane on unpromoted and potassium promoted calcium aluminates, 219

ζ -Potential
 Impacts of the surface charge property on protein adsorption on hydroxyapatite, 181

POTW
 Co-treatment of H_2S and toluene in a biotrickling filter, 101

Power-law fluids
 Solutions for the internal boundary layer equations in simultaneously developing flow of power-law fluids within parallel plates channels, 339

Precipitation
 Quantification, by image analysis, of effect of operational conditions on size and shape of precipitated barium sulphate, 135

Pressure
 Drying kinetics of single porous particles in superheated steam under pressure, 329

Pressure fluctuations
 Cold model characterisation of a fluidised bed catalytic reactor by means of instantaneous pressure measurements, 61

Process integration
 Process integration using aqueous two-phase partition for the recovery of intracellular proteins, 313

Protein recovery
 Process integration using aqueous two-phase partition for the recovery of intracellular proteins, 313

Pulsations
 CFD analysis of spinning cone columns: prediction of unsteady gas flow and pressure drop in a dry column, 301

Pyrethrum flower
 Investigation in solid-liquid extraction: influence of ultrasound, 11

Pyrolysis
 Catalytic pyrolysis of *n*-heptane on unpromoted and potassium promoted calcium aluminates, 219

Quaternization
 The solvent effect and the structural effect of halides on the quaternization $Et_3N + RX \rightarrow Et_3RNX$, 197

Radioactive wastes
 Self-propagating reactions for environmental protection: state of the art and future directions, 239

Recombinant fermentation
 Comparative evaluation of batch and fed-batch bioreactors for GAPDH production by recombinant *Escherichia coli* with distributed plasmid copy number, 357

Relative volatilities at infinite dilution
 Influence of salt added to solvent on extractive distillation, 149

Reverse-flow operation
 Mathematical modelling of Claus reactors undergoing sulfur condensation and evaporation, 73

Riser
 Dilute gas-solid flow in a riser, 41

Robustness
 Reaction heat estimation in continuous chemical reactors using high gain observers, 351

Self-propagating reactions
 Self-propagating reactions for environmental protection: state of the art and future directions, 239

Silicon sludge
 Self-propagating reactions for environmental protection: state of the art and future directions, 239

Simultaneously developing laminar flow
 Solutions for the internal boundary layer equations in simultaneously developing flow of power-law fluids within parallel plates channels, 339

Single particle
 Drying kinetics of single porous particles in superheated steam under pressure, 329

Soil remediation
 Characteristic time determination for transport phenomena during the electrokinetic treatment of a porous medium, 251

Solid sphere
 Rising solid sphere hydrodynamics at high Reynolds numbers in non-Newtonian fluids, 129

Solid-liquid extraction
 Investigation in solid-liquid extraction: influence of ultrasound, 11

Solvent effect
 The solvent effect and the structural effect of halides on the quaternization $Et_3N + RX \rightarrow Et_3RNX$, 197

Spinning cone distillation column
CFD analysis of spinning cone columns: prediction of unsteady gas flow and pressure drop in a dry column, 301

SPME
Adsorption of lindane from water onto GAC: effect of carbon loading on kinetic behavior, 111

Steam drying
Drying kinetics of single porous particles in superheated steam under pressure, 329

Streamfunction formulation
Solutions for the internal boundary layer equations in simultaneously developing flow of power-law fluids within parallel plates channels, 339

Structural effect
The solvent effect and the structural effect of halides on the quaternization $\text{Et}_3\text{N} + \text{RX} \rightarrow \text{Et}_3\text{RNX}$, 197

Sulfur
Mathematical modelling of Claus reactors undergoing sulfur condensation and evaporation, 73

Sulfur condensation
Mathematical modelling of Claus reactors undergoing sulfur condensation and evaporation, 73

Sulfur dioxide
Application of coal gasification technology as a flue gas preconditioning step for the catalytic reduction of acid gases, 395

Sustained disturbances
Reaction heat estimation in continuous chemical reactors using high gain observers, 351

Synergistic effect
A synergistic effect of photocatalysis and ozonation on decomposition of formic acid in an aqueous solution, 261

Triethylamine
The solvent effect and the structural effect of halides on the quaternization $\text{Et}_3\text{N} + \text{RX} \rightarrow \text{Et}_3\text{RNX}$, 197

Ultrasound
Investigation in solid–liquid extraction: influence of ultrasound, 11

Uncertainty observer
Reaction heat estimation in continuous chemical reactors using high gain observers, 351

Vapor–liquid equilibria
Influence of salt added to solvent on extractive distillation, 149

VOC
Co-treatment of H_2S and toluene in a biotrickling filter, 101

W/O emulsion
Equilibrium and mass transfer characteristics of 2-chlorophenol removal from aqueous solution by liquid membrane, 163

Waste air treatment
Co-treatment of H_2S and toluene in a biotrickling filter, 101

Wastewater treatment
Insight into heterogeneous catalytic wet oxidation of phenol over a Ru/TiO₂ catalyst, 403

Wet oxidation
Insight into heterogeneous catalytic wet oxidation of phenol over a Ru/TiO₂ catalyst, 403

Woad seeds
Investigation in solid–liquid extraction: influence of ultrasound, 11

Zeolites
Verification of the Maxwell–Stefan theory for diffusion of three-component mixtures in zeolites, 1

